DETAILED ACTION

This is a final Office action in response to a non-final Office action reply filed 6/18/09, in which claims 1 and 4 were amended, claim 2 was cancelled, and claim 22 was added.

Claim Objections

1. Claim 3 is objected to because of the following informalities: claim 3, ln 1 recites "The method as claimed in claim 2" which appears to be a misstatement of "The method as claimed in claim 1".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 3 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gord et al (WO 03/000060, already of record), and further in view of Reichel et al (US 2176925).

For claims 1 and 3, Gord et al teach a method for producing a seamless edible cellulose tubing from underivatized cellulose in which a solution of the underivatized cellulose in tertiary amine N-oxide, additives and water is extruded (pg 3 lns 29-32) from an annular die as tubing and is conducted downward through an air gap into a water bath, in order to solidify the cellulose and the additives and allow amine N-oxide to escape from the cellulose (pg 7 lns 1-34), in addition, the cellulose tubing is conducted out of the water bath, thereafter the tubing is passed through at least two wash sections and one plasticizing section and after exit from the plasticizing section is predried as wet tubing in the laid-flat state before it is dried, in the blown state, to-its final moisture (pg 9 lns 7-23).

Gord et al do not explicitly teach the cellulose tubing is predried to a moisture of about 30 to 70% or 40 to 60% of the moisture of the wet tubing and said tubing has up to a 30% higher bursting pressure in comparison to a non-predried tubing. However, Gord et al do teach reducing the water content in the gel tube to increase the stability of the tubular film by drying it first in the non-inflated state using hot air to the point that the final drying can be carried out in the inflated state (pg 7 lns 1-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the water content in the gel tube to a moisture of about 30 to 70% or 40 to 60% of the moisture of the wet tubing, since it has been held that discovering an

optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to optimize the water content for the purpose of stabilizing the tube for final drying. Please see MPEP 2144.05 (II) and In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) for further details. Regarding said tubing has up to a 30% higher bursting pressure in comparison to a non-predried tubing, Examiner points out that since 0% is included in the range of up to 30%, there is not a positive claim to any result that carries patentable weight.

Gord et al do not teach cleaning the tubing by spraying it with heated water, the tubing being transported up an incline during the spraying, after removal from the initial water bath.

However, in the same field of endeavor pertaining to making tubing for sausage casings, Reichel et al teach washing the tubing by spraying it with water as it is transported upward vertically, after removal from the initial bath (Figure and pg 5 lns 3-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Reichel et al with those of Gord et al for the benefit of making the cleaning process more efficient. Further, though the previous combination does not explicitly teach spraying with heated water, Gord et al do teach passing the tubing through 4 wash vats, while also increasing the temperature from one vat to the next up to from 60 to 70 C (pg 9 lns 7-23), and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to spray with heated water.

For claims 6-7 and 9-10, the previous combination does not explicitly teach the cellulose tubing passes through a predrying zone two times, by being turned round by 180° at one end of the predrying zone; or the cellulose tubing passes vertically through the predrying zone; or the predrying takes place in a predrying zone of a length of up to about 12 m and is predried by air which is at a temperature up to about 130 °C; or the running speed of the cellulose tubing, the length of the predrying zone and the temperature of the air are adjusted to one another in such a manner that the moisture of the predried cellulose tubing at the exit from the predrying zone is about 40 to about 60 % of the moisture of the wet cellulose tubing.

However, since Gord et al do teach increasing the stability of the tubular film by drying it first in the non-inflated state using hot air (pg 7 lns 1-31), it would have been obvious to one of ordinary skill in the art at the time the invention was made to try to optimize the predrying process by such ways as passing the tubing through a predrying zone two times, by being turned round by 180° at one end of the predrying zone; and passing the tubing vertically through the predrying zone; and performing the predrying in a predrying zone of a length of up to about 12 m and is predried by air which is at a temperature up to about 130 °C; and adjusting the running speed of the cellulose tubing, the length of the predrying zone and the temperature of the air to one another in such a manner that the moisture of the predried cellulose tubing at the exit from the predrying zone is about 40 to about 60 % of the moisture of the wet cellulose tubing, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the

art. One would have been motivated to perform routine experimentation for the purpose of process optimization. Please see In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 for further details.

For claim 5, it is inherent that the tubing is shrunk by the predrying and its extensibility is decreased.

For claims 8 and 11, Gord et al teach the cellulose tubing passes horizontally through the predrying zone and the predried cellulose tubing is dried in the inflated state between two pinch-roll pairs by hot air to a final moisture of up to about 10 % of the moisture of the wet cellulose tubing (pg 9 lns 7-23).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gord et al, further in view of Reichel et al, and further in view of Underwood et al (US 2901358).

The previous combination teaches the invention as discussed above.

The previous combination does not teach an impregnation solution is applied to the tubing inside of the predried tubing.

However, in the same field of endeavor pertaining to making food casing, Underwood et al teach passing the tubing between squeeze rolls to minimize any solution carryover, which Examiner notes reduces moisture content and is a method of predrying, and then introducing a chemical inside of the tubing to coat the surface (Figure and cl 1 ln 57 to cl 2 ln 16). Further, it is inherent that some of the coated chemical impregnates the tubing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Underwood et al with those of Gord et al/Reichel et al for the benefit of chemically treating the inside of the tubing to further enhance the product.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gord et al, further in view of Reichel et al, further in view of Underwood et al, and further in view of Firth (US 3158492).

The previous combination teaches the invention as discussed above.

The previous combination does not teach impregnating the predried cellulose tubing with an impregnation solution having about 2 % by weight of a distearyl diketene before drying.

However, in the same field of endeavor pertaining to making food casing, Firth teaches impregnating the predried cellulose tubing before drying with an impregnation solution (cl 3 lns 47-54) having diketenes prepared from naturally occurring fatty acids (cl 2 lns 52-68), which would include stearic acid. Firth also teaches an exemplary commercial product called Aquapel 380 which is added to the impregnation solution preferably in the amount of 0.1 to 1% (cl 4 lns 7-8). Since the claimed amount of about 2% is close enough that one skilled in the art would have expected the impregnation solutions to have the same properties, a prima facie case of obviousness exists. Please see MPEP 2144.05 (I) and Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Firth with those of the previous combination for the benefit of producing a casing which can be readily peeled off from the encased sausage without damaging the meat surface as suggested by Firth (cl 2 lns 32-35).

Response to Arguments

Applicant's arguments regarding claims 1 and 3-11 were fully considered and are not persuasive.

First, Applicant asserts that US 209, the US equivalent of WO 03/000060, generically noting preliminary drying, does not teach or suggest that predrying cellulose tubing to a moisture of about 30 to about 70 % of the moisture of the wet tubing would result in an up to a 30 % higher bursting pressure in comparison to a non-predried tubing. Nor would there have been any motivation for US 209 to have determined the recited moisture content, as US 209 does not recognize drying as a result-effective-variable in casing burst strength. Examiner, however, points out that, as cited in the rejection of claims 1 and 3 above, US 209 teaches reducing the water content in the gel tube to increase the stability of the tubular film by drying it first in the non-inflated state using hot air to the point that the final drying can be carried out in the inflated state, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the water content in the gel tube to a moisture of about 30 to 70% of the moisture of the wet tubing, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have

been motivated to optimize the water content for the purpose of stabilizing the tube for final drying. Please see MPEP 2144.05 (II) and In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) for further details. Regarding the limitation that the tubing has up to a 30% higher bursting pressure in comparison to a non-predried tubing, Examiner observes that since 0% is included in the range of up to 30%, there is not a positive claim to any result that carries patentable weight.

Second, Applicant asserts that US 209, expressly teaching horizontal drying, also fails to teach or suggest drying cellulose tubing by passing it vertically through a predrying zone, much less passing vertically two times by being turned round by 180° at one end of the predrying zone, as recited in claim 7. Examiner, however, points out that as cited in the rejection of claims 6-7 above, the predrying process would have been obvious to optimize as well. In particular, since US 209 teaches horizontal drying, it would have been obvious to one of ordinary skill in the art at the time the invention was made to try drying the cellulose tubing by passing it vertically through a predrying zone, since it has been held that a mere rearrangement of elements without modification of the operation of the device involves only routine skill in the art. One would have been motivated to rearrange the elements in such a manner so as to most effectively reduce the water content of the tubing. Please see In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) for details. Further, it would have also been obvious to one of ordinary skill to try passing vertically two times by being turned round by 180° at an end of a zone. Please see, for example, Underwood's Figure which includes such element.

Third, Applicant asserts that the Office Action's urgings that the "squeeze rolls" of US 358 are a method of pre-drying is conjecture because US 358 merely impedes super-saturated liquids clinging to casing surface, i.e. "solution carry over" from entering the next process step, and US 358 also clearly indicates that the casing remains in a gel form during coating. Examiner, however, points out that the squeeze rolls remove water from the tubing, whether it be water clinging to the surface and/or water within the casing and as such they predry the tubing. Further, though US 358 indicates that the casing remains in a gel form during coating, this does not preclude predrying and in fact, since the casing in gel form holds the volume of coating composition, shows that the casing in such form has attained enough stability to do so.

Applicant's other arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES SANDERS whose telephone number is 571-270-7007. The examiner can normally be reached on Monday through Friday, 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on 571-272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMS

/Joseph S. Del Sole/

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